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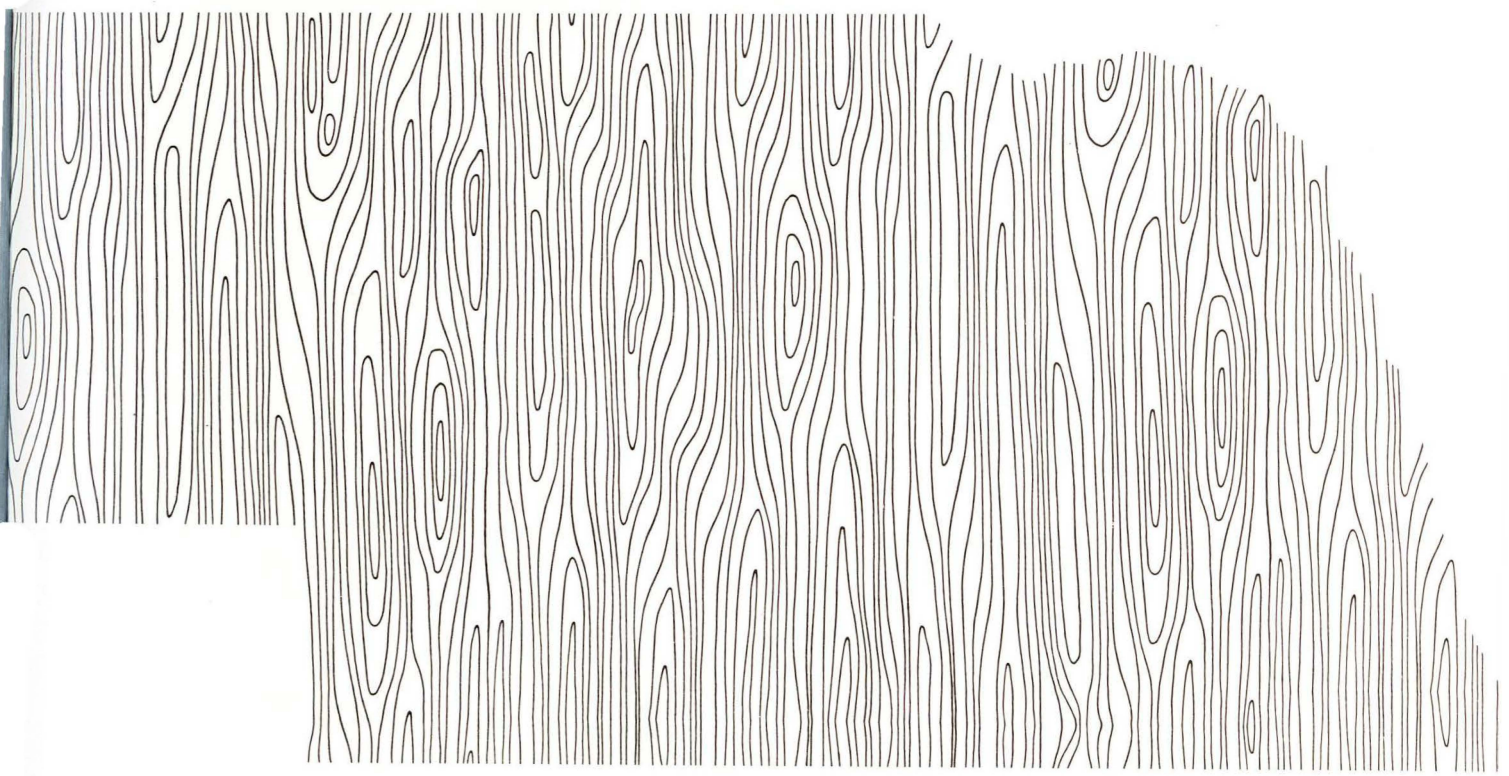
Primary Forest Products Industry and Timber Use, Nebraska, 1980

James E. Blyth, Tom D. Wardle, and W. Brad Smith



North Central Forest Experiment Station
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FOREWORD

This Bulletin contains the results of a detailed study of forest industry, timber products output from roundwood, and associated primary mill wood and bark residue in Nebraska in 1980. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, and forest industry development. Likewise, researchers need current forest industry and timber products output information to plan projects.

Special thanks are given to the primary wood-using firms that supplied information for this study. Their cooperation is greatly appreciated.

Quantities shown may vary slightly from one table to another because of rounding differences, but these differences are insignificant.

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PRIMARY FOREST PRODUCTS INDUSTRY AND TIMBER USE, NEBRASKA, 1980

James E. Blyth, *Principal Market Analyst, St. Paul, Minnesota*
Tom D. Wardle, *Forest Resource Planner, Department of Forestry, Fisheries and Wildlife, University of Nebraska, Lincoln, Nebraska, and* **W. Brad Smith,** *Mensurationist, St. Paul, Minnesota*

HIGHLIGHTS

- The number of active primary wood-using mills fell sharply from approximately 198 in 1953 to 46 in 1980. Forty-two of the 46 mills in 1980 were sawmills; nearly two-thirds of the sawmills were in the Eastern Forest Survey Unit (fig. 1).
- Timber products output (TPO) from roundwood climbed 161 percent between 1953 and 1980 to 15.3 million cubic feet. Harvest gains were chiefly in oak, cottonwood, green ash, and hackberry. These were also the principal species harvested in 1980, supplying 72 percent of the roundwood.
- Average annual lumber production at sawmills increased from 43,000 board feet in 1953 to 498,000 board feet in 1980. In 1953, the largest sawmill produced about 700,000 board feet. In 1980, 7 mills each sawed 1 million or more board feet of lumber.
- About four-fifths (79 percent) of the TPO came from the Eastern Unit.

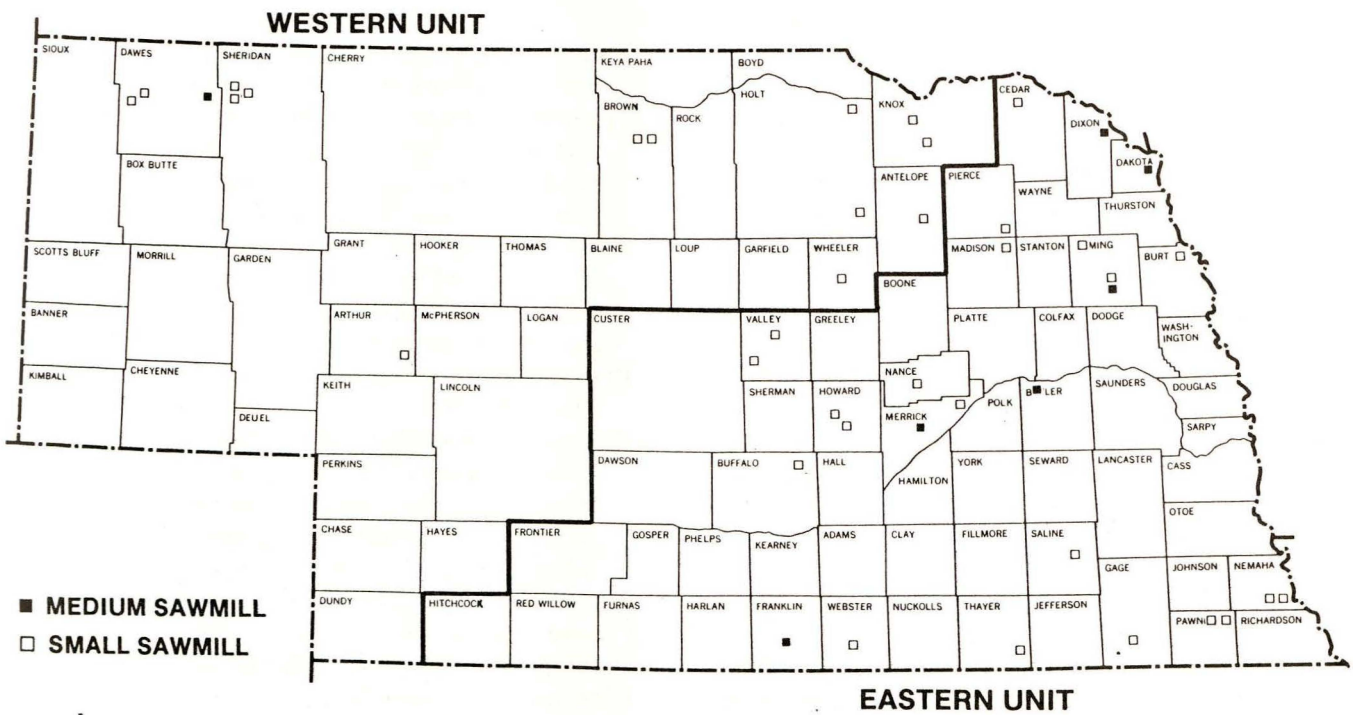

Figure 1.—*Active sawmills and Forest Survey Units in Nebraska, 1980. Sawmills are classed by volume of lumber produced in 1980: medium = 1 to 5 million board feet; small = less than 1 million board feet. Forest Survey Units are the geographic areas used by the Forest Inventory and Analysis Project to report periodic inventories and use of the Nations' forest resources.*

- Estimated fuelwood production from roundwood was 169,000 cords, accounting for 78 percent of the State's roundwood harvest. Fuelwood production from roundwood in 1980 was 1.9 times greater than that produced in 1953.
- Saw log production was 19.0 million board feet, up 132 percent from 1953. Cottonwood accounted for most of the increase, as well as 81 percent of the harvest in 1980. Other important species cut for saw logs were ponderosa pine and black walnut.
- Most of the saw log production was processed in Nebraska. Only 900,000 board feet were exported, primarily to Kansas. The Eastern Unit led in production (16.1 million board feet). Ponderosa pine was the major saw log species cut in the Western Unit.
- Counties each producing more than 1 million board feet of saw logs were (in order of importance) Sioux, Madison, Cuming, and Pierce. These counties furnished 24 percent of the Nebraska saw log harvest.
- Nebraska sawmills received 20.9 million board feet of logs in 1980. South Dakota supplied 2.2 million board feet; small amounts were supplied by Iowa, Kansas, and Missouri. Ninety-five percent of the imported volume was cottonwood.
- Sawmills in the Eastern Unit received 90 percent of all saw log receipts in Nebraska. Western Unit sawmills sawed all but a nominal amount of the ponderosa pine receipts.

All of the imported saw logs were shipped to Eastern Unit sawmills.

An estimated 331,000 posts were cut in Nebraska, down 37 percent from 1953. Osage-orange and ponderosa pine were the preferred species.

During 1980, on a green weight basis, Nebraska primary wood-using mills generated 28,600 tons of coarse (chippable) wood residue, 17,300 tons of fine wood residue, and 12,600 tons of bark. Fuel was the dominant use for coarse wood and bark residue. Forty-two percent of the bark, 36 percent of the coarse wood residue, and 21 percent of the fine wood residue was not used for any purpose.

APPENDIX

STUDY METHODS

Except for fuelwood and posts, data for this publication came from canvassing all of the known primary wood-using mills that use Nebraska logs and bolts. All canvassing in Nebraska was done with a formal questionnaire by mail, telephone, or personal contact by the Nebraska Forest Service (NFS). For a few Nebraska mills that did not furnish complete data, NFS utilization and marketing specialists provided estimates based on prior knowledge and contacts. Similar cooperative studies in other North Central States by the North Central Forest Experiment Station and State forest agencies provided data from out-of-State mills that used Nebraska logs and bolts.

General offices of railroads serving Nebraska were solicited by the Station to determine the volume of veneer logs shipped from Nebraska to seaports for export overseas.

Fuelwood and post production for 1980 in Nebraska were estimated by the NFS based on recent production studies, records, and discussions with others knowledgeable about these products.

The Station edited and compiled the data.

SAMPLING ERROR

Because all primary wood-using mills were canvassed, there is no sampling error for the roundwood products they use.

DEFINITION OF TERMS

Roundwood.—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

Timber products output from roundwood.—Logs and bolts (including chips from roundwood) harvested for saw logs, veneer logs, cooperage logs, pulpwood, posts, fuelwood, and other products.

Forest Survey Unit.—A geographical area (group of counties) used by the Forest Inventory and Analysis Project to report periodic inventories and use of the Nation's forest resources.

Primary wood-using mills.—Mills using roundwood products (including chips from roundwood).

Primary wood-using mill residue.—Wood materials (coarse and fine) and bark not utilized for principal products at mills using roundwood. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some product.

Coarse mill residue.—Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

Fine mill residue.—Wood residue not suitable for chipping such as sawdust and veneer clippings.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES IN NEBRASKA

SOFTWOODS

- Ponderosa pine ..... *Pinus ponderosa*
- Redcedar (eastern)..... *Juniperus virginiana*

HARDWOODS

- Ash
  - Green ash ..... *Fraxinus pennsylvanica*
  - White ash ..... *Fraxinus americana*
- Aspen (quaking) ..... *Populus tremuloides*
- Balsam poplar ..... *Populus balsamifera*
- Basswood (American) ..... *Tilia americana*
- Boxelder ..... *Acer negundo*
- Cherry (black) ..... *Prunus serotina*
- Catalpa (northern) ..... *Catalpa speciosa*
- Cottonwood
  - Eastern cottonwood ..... *Populus deltoides*
  - Plains cottonwood ..... *Populus sargentii*
- Elm
  - American elm ..... *Ulmus americana*
  - Rock elm ..... *Ulmus thomasii*
  - Siberian elm ..... *Ulmus pumila*
  - Slippery elm ..... *Ulmus rubra*
- Hackberry ..... *Celtis occidentalis*
- Hickory
  - Bitternut hickory ..... *Carya cordiformis*
  - Mockernut hickory ..... *Carya tomentosa*
  - Pecan ..... *Carya illinoensis*
  - Pignut hickory ..... *Carya glabra*
  - Shagbark hickory ..... *Carya ovata*
  - Shellbark hickory ..... *Carya laciniosa*
- Honeylocust ..... *Gleditsia triacanthos*
- Maple (silver) ..... *Acer saccharinum*
- Red mulberry ..... *Morus rubra*
- Oak
  - Select red oaks
    - Northern red oak ..... *Quercus rubra*
  - Other red oaks
    - Black oak ..... *Quercus velutina*
    - Blackjack oak ..... *Quercus marilandica*
  - Select white oaks
    - Bur oak ..... *Quercus macrocarpa*
    - Chinkapin oak ..... *Quercus muehlenbergii*
  - Other white oaks
    - Swamp white oak ..... *Quercus bicolor*
- Osage-orange ..... *Maclura pomifera*
- Sycamore (American) ..... *Platanus occidentalis*
- Walnut (black) ..... *Juglans nigra*
- Willow (black) ..... *Salix nigra*

Table 1.--Timber products output from roundwood by species group and product, Nebraska, 1980

Species	All products	Saw logs		Fuelwood		Posts		Veneer logs		Other products
	MCF[1]	MBF[2]	MCF[1]	Cords[3]	MCF[1]	M pieces[4]	MCF[1]	MBF[2]	MCF[1]	MCF[1]
Softwoods										
Ponderosa pine	472	1,621	282	316	21	83	63	--	--	106
Eastern redcedar	56	152	31	--	--	33	25	--	--	--
Total	528	1,773	313	316	21	116	88	--	--	106
Hardwoods										
Green ash	1,702	56	8	24,192	1,694	--	--	--	--	--
Basswood	54	35	6	665	48	--	--	--	--	--
Boxelder	222	--	--	3,190	222	--	--	--	--	--
Cottonwood	3,034	15,420	2,377	7,934	557	3	1	433	99	--
Elm	593	24	2	8,434	591	--	--	--	--	--
Hackberry	948	23	3	13,495	944	3	1	--	--	--
Hickory	354	--	--	5,061	354	--	--	--	--	--
Soft maple	46	59	9	506	37	--	--	--	--	--
Red oak	527	56	9	7,280	510	13	8	--	--	--
White Oak	4,813	430	73	67,324	4,713	13	7	--	--	20
Sycamore	121	15	3	1,687	118	--	--	--	--	--
Black walnut	195	1,097	164	255	18	--	--	98	13	--
Willow	881	--	--	12,560	881	--	--	--	--	--
Osage-orange	316	--	--	3,142	220	166	96	--	--	--
Other hardwoods	914	3	5/	12,959	906	17	8	--	--	--
Total	14,720	17,218	2,654	168,684	11,813	215	121	531	112	20
All species	15,248	18,991	2,967	169,000	11,834	331	209	531	112	126

1/ Thousand cubic feet.

2/ Thousand board feet, International 1/4-inch rule.

3/ Standard cords.

4/ Thousand pieces.

5/ Less than 500 cubic feet.

Table 2.--Timber products output from roundwood by species group, Nebraska, 1953 and 1980

(In thousand cubic feet)

Species group	1953	1980	Change
Softwoods			
Ponderosa pine	53	472	419
Eastern redcedar	2	56	54
Total	55	528	473
Hardwoods			
Green ash	275	1,702	1,427
Boxelder	328	222	-106
Cottonwood	1,109	3,034	1,925
Elm	748	593	-155
Hackberry	4	948	944
Soft maple	379	46	-333
Oak	1,497	5,340	3,843
Osage-orange	343	316	-27
Black walnut	358	195	-163
Other hardwoods	736	2,324	1,588
Total	5,777	14,720	8,943
All species	5,832	15,248	9,416

Table 3.--Number of active primary wood-using mills by Unit, Nebraska, 1980

Kind of mill	All Units	Eastern Unit	Western Unit
Sawmills			
Small[1/]	35	21	14
Medium[2/]	7	6	1
Cooperage mills	1	1	--
Charcoal plants	1	1	--
Miscellaneous plants[3/]	2	1	1
Total	46	30	16

[1/] Annual lumber output less than 1 million board feet.

[2/] Annual lumber output from 1 to 5 million board feet.

[3/] Fence post concentration yards and treating plants.

Table 4.--Timber products output from roundwood by species group and Unit, Nebraska, 1980

(In thousand cubic feet)

Species group	All Units	Eastern Unit	Western Unit
Softwoods			
Ponderosa pine	472	--	472
Eastern redcedar	56	34	22
Total	528	34	494
Hardwoods			
Green ash	1,702	1,232	470
Basswood	54	50	4
Boxelder	222	181	41
Cottonwood	3,034	2,709	325
Elm	593	552	41
Hackberry	948	891	57
Hickory	354	354	--
Soft maple	46	46	--
Red oak	527	527	--
White oak	4,813	3,551	1,262
Sycamore	121	121	--
Black walnut	195	190	5
Willow	881	672	209
Osage-orange	316	284	32
Other hardwoods	914	661	253
Total	14,720	12,021	2,699
All species	15,248	12,055	3,193

Table 5.--Saw log production by species group, Nebraska, 1953 and 1980

(In thousand board feet)[1/]

Species group	1953[2/]	1980	Change
Softwoods			
Ponderosa pine	372	1,621	1,249
Eastern redcedar	10	152	142
Total	382	1,773	1,391
Hardwoods			
Green ash	41	56	15
Basswood	6	35	29
Cottonwood	6,464	15,420	8,956
Elm	162	24	-138
Hackberry	28	23	-5
Soft maple	288	59	-229
Oak	358	486	128
Sycamore	4	15	11
Black walnut	462	1,097	635
Other hardwoods	2	3	1
Total	7,815	17,218	9,403
All species	8,197	18,991	10,794

[1/] International 1/4-inch rule.

[2/] Estimated based on lumber production.

Table 6.--Saw log production by Unit, species group and State of destination, Nebraska, 1980

(In thousand board feet)[1/]

Species group	All States	State		
		Nebraska	Kansas	Missouri
ALL UNITS				
Softwoods				
Ponderosa pine	1,621	1,621	--	--
Eastern redcedar	152	152	--	--
Total	1,773	1,773	--	--
Hardwoods				
Green ash	56	56	--	--
Basswood	35	35	--	--
Cottonwood	15,420	15,340	80	--
Elm	24	24	--	--
Hackberry	23	20	3	--
Soft maple	59	59	--	--
Red oak	56	56	--	--
White oak	430	430	--	--
Sycamore	15	15	--	--
Black walnut	1,097	264	585	248
Other hardwoods	3	3	--	--
Total	17,218	16,302	668	248
All species	18,991	18,075	668	248
EASTERN UNIT				
Softwoods				
Ponderosa pine	--	--	--	--
Eastern redcedar	139	139	--	--
Total	139	139	--	--
Hardwoods				
Green ash	55	55	--	--
Basswood	35	35	--	--
Cottonwood	14,259	14,179	80	--
Elm	15	15	--	--
Hackberry	22	19	3	--
Soft maple	59	59	--	--
Red oak	56	56	--	--
White oak	420	420	--	--
Sycamore	15	15	--	--
Black walnut	1,065	232	585	248
Other hardwoods	2	2	--	--
Total	16,003	15,087	668	248
All species	16,142	15,226	668	248
WESTERN UNIT				
Softwoods				
Ponderosa pine	1,621	1,621	--	--
Eastern redcedar	13	13	--	--
Total	1,634	1,634	--	--
Hardwoods				
Green ash	1	1	--	--
Basswood	--	--	--	--
Cottonwood	1,161	1,161	--	--
Elm	9	9	--	--
Hackberry	1	1	--	--
Soft maple	--	--	--	--
Red oak	--	--	--	--
White oak	10	10	--	--
Sycamore	--	--	--	--
Black walnut	32	32	--	--
Other hardwoods	1	1	--	--
Total	1,215	1,215	--	--
All species	2,849	2,849	--	--

[1/] International 1/4-inch rule.

Table 7.--Saw log production by Unit, county, and species group, Nebraska, 1980

(In thousand board feet)[1/]

EASTERN UNIT

County	All species	Species group												
		Ponderosa pine	Red-cedar	Green ash	Bass-wood	Cotton-wood	Elm	Hack-berry	Soft maple	Red oak	White oak	Syca-more	Black walnut	Other hardwoods
Boone	223	--	--	--	--	223	--	--	--	--	--	--	--	--
Buffalo	80	--	14	8	--	41	1	--	--	--	--	1	14	1
Burt	127	--	--	10	--	62	--	--	7	--	--	--	48	--
Butler	459	--	--	--	--	413	--	--	--	--	46	--	--	--
Cass	280	--	--	--	--	174	--	--	--	--	--	--	106	--
Cedar	525	--	--	--	--	525	--	--	--	--	--	--	--	--
Colfax	206	--	--	--	--	206	--	--	--	--	--	--	--	--
Cuming	1,075	--	--	1	--	1,066	--	--	1	--	--	--	7	--
Dakota	104	--	--	--	--	104	--	--	--	--	--	--	--	--
Dixon	125	--	--	7	--	104	--	--	7	--	--	--	7	--
Dodge	189	--	--	--	--	189	--	--	--	--	--	--	--	--
Douglas	32	--	--	--	--	32	--	--	--	--	--	--	--	--
Franklin	697	--	--	--	--	697	--	--	--	--	--	--	--	--
Furnas	8	--	--	--	--	8	--	--	--	--	--	--	--	--
Gage	135	--	--	--	--	--	--	--	--	21	41	--	73	--
Greeley	207	--	--	--	--	207	--	--	--	--	--	--	--	--
Hall	97	--	--	--	--	97	--	--	--	--	--	--	--	--
Hamilton	97	--	--	--	--	97	--	--	--	--	--	--	--	--
Harlan	414	--	--	--	--	414	--	--	--	--	--	--	--	--
Hitchcock	25	--	--	--	--	22	--	3	--	--	--	--	--	--
Howard	117	--	2	--	--	105	--	--	--	--	7	--	3	--
Jefferson	1	--	--	--	--	--	--	--	--	--	1	--	--	--
Johnson	114	--	--	1	--	3	--	1	4	--	7	--	98	--
Lancaster	286	--	--	--	--	268	--	--	--	--	18	--	--	--
Madison	1,188	--	--	--	--	1,188	--	--	--	--	--	--	--	--
Merrick	666	--	110	--	--	556	--	--	--	--	--	--	--	--
Nance	599	--	--	--	--	599	--	--	--	--	--	--	--	--
Nemaha	814	--	--	--	--	683	--	--	--	--	--	4	127	--
Otoe	633	--	--	--	--	475	--	--	--	--	--	4	154	--
Pawnee	575	--	1	7	--	224	--	11	23	21	115	--	173	--
Pierce	1,001	--	--	--	--	1,001	--	--	--	--	--	--	--	--
Platte	335	--	1	--	--	331	--	--	--	--	--	--	3	--
Polk	650	--	--	--	--	650	--	--	--	--	--	--	--	--
Red Willow	36	--	--	--	--	36	--	--	--	--	--	--	--	--
Richardson	835	--	--	4	--	574	--	6	11	--	54	6	180	--
Saline	288	--	--	--	--	233	--	--	--	--	55	--	--	--
Sarpy	63	--	--	--	--	15	--	--	--	--	--	--	48	--
Saunders	336	--	--	--	--	299	--	--	--	--	37	--	--	--
Seward	409	--	--	--	--	381	--	--	--	--	28	--	--	--
Sherman	111	--	--	--	--	111	--	--	--	--	--	--	--	--
Stanton	174	--	--	1	--	165	--	--	1	--	--	--	7	--
Thayer	11	--	--	--	--	10	--	--	--	--	1	--	--	--
Thurston	229	--	--	--	35	166	14	--	--	14	--	--	--	--
Valley	138	--	11	15	--	100	--	1	1	--	--	--	9	1
Washington	59	--	--	1	--	47	--	--	4	--	--	--	7	--
Wayne	380	--	--	--	--	380	--	--	--	--	--	--	--	--
Webster	628	--	--	--	--	628	--	--	--	--	--	--	--	--
York	361	--	--	--	--	350	--	--	--	--	10	--	1	--
Total	16,142	--	139	55	35	14,259	15	22	59	56	420	15	1,065	2

(Table 7 continued on next page)

(Table 7 continued)

WESTERN UNIT

County	All species	Species group: Ponderosa pine	Red-cedar	Green ash	Bass-wood	Cotton-wood	Elm	Hack-berry	Soft maple	Red oak	White oak	Syca-more	Black walnut	Other hardwoods
Antelope	60	3	1	--	--	28	--	--	--	--	--	--	28	--
Arthur	14	--	3	--	--	6	3	1	--	--	--	--	1	--
Brown	34	27	3	1	--	1	--	--	--	--	1	--	1	--
Dawes	171	171	--	--	--	--	--	--	--	--	--	--	--	--
Garfield	277	--	--	--	--	276	--	--	--	--	--	--	--	1
Holt	363	--	4	--	--	349	3	--	--	--	6	--	1	--
Keya Paha	18	13	2	--	--	2	--	--	--	--	--	--	1	--
Knox	404	--	--	--	--	398	3	--	--	--	3	--	--	--
Sheridan	110	110	--	--	--	--	--	--	--	--	--	--	--	--
Sioux	1,296	1,296	--	--	--	--	--	--	--	--	--	--	--	--
Thomas	1	1	--	--	--	--	--	--	--	--	--	--	--	--
Wheeler	101	--	--	--	--	101	--	--	--	--	--	--	--	--
Total	2,849	1,621	13	1	--	1,161	9	1	--	--	10	--	32	1
State total	18,991	1,621	152	56	35	15,420	24	23	59	56	430	15	1,097	3

[1/] International 1/4-inch rule.

Table 8.--Saw log receipts by Unit, species group, and State of origin, Nebraska, 1980

(In thousand board feet)[1/]

Species group	All States	State				
		Nebraska	South Dakota	Iowa	Kansas	Missouri
ALL UNITS						
Softwoods						
Ponderosa pine	1,621	1,621	--	--	--	--
Eastern redcedar	152	152	--	--	--	--
Total	1,773	1,773	--	--	--	--
Hardwoods						
Green ash	56	56	--	--	--	--
Basswood	35	35	--	--	--	--
Cottonwood	18,016	15,340	2,209	380	4	83
Elm	24	24	--	--	--	--
Hackberry	20	20	--	--	--	--
Soft maple	59	59	--	--	--	--
Red oak	56	56	--	--	--	--
White oak	555	430	--	--	125	--
Sycamore	15	15	--	--	--	--
Black walnut	285	264	--	3	18	--
Other hardwoods	3	3	--	--	--	--
Total	19,124	16,302	2,209	383	147	83
All species	20,897	18,075	2,209	383	147	83
EASTERN UNIT						
Softwoods						
Ponderosa pine	1	1	--	--	--	--
Eastern redcedar	139	139	--	--	--	--
Total	140	140	--	--	--	--
Hardwoods						
Green ash	55	55	--	--	--	--
Basswood	35	35	--	--	--	--
Cottonwood	17,608	14,932	2,209	380	4	83
Elm	15	15	--	--	--	--
Hackberry	19	19	--	--	--	--
Soft maple	59	59	--	--	--	--
Red oak	56	56	--	--	--	--
White oak	545	420	--	--	125	--
Sycamore	15	15	--	--	--	--
Black walnut	253	232	--	3	18	--
Other hardwoods	3	3	--	--	--	--
Total	18,663	15,841	2,209	383	147	83
All species	18,803	15,981	2,209	383	147	83
WESTERN UNIT						
Softwoods						
Ponderosa pine	1,620	1,620	--	--	--	--
Eastern redcedar	13	13	--	--	--	--
Total	1,633	1,633	--	--	--	--
Hardwoods						
Green ash	1	1	--	--	--	--
Cottonwood	408	408	--	--	--	--
Elm	9	9	--	--	--	--
Hackberry	1	1	--	--	--	--
White oak	10	10	--	--	--	--
Black walnut	32	32	--	--	--	--
Total	461	461	--	--	--	--
All species	2,094	2,094	--	--	--	--

[1/] International 1/4-inch rule.

Table 9.--Residue produced at primary wood-using mills by type of material, type of use, and Unit, Nebraska, 1980

(In thousand tons green weight)

Unit and type of use	Wood residue						Bark	
	Total		Coarse[1]		Fine[2]			
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
Eastern Unit								
Domestic fuel[3]	0.04	10.95	0.04	10.90	--	0.05	--	5.47
Miscellaneous[3]	.25	16.75	.15	4.48	.10	12.27	.04	.62
Not used	--	13.48	--	10.23	--	3.25	--	4.96
Total	.29	41.18	.19	25.61	.10	15.57	.04	11.05
Western Unit								
Domestic fuel[3]	1.53	.60	1.53	.60	--	--	.64	.27
Miscellaneous[3]	1.55	.19	.49	--	1.06	.19	.28	--
Not used	.38	.16	.18	.01	.20	.15	.35	--
Total	3.46	.95	2.20	.61	1.26	.34	1.27	.27
All Units								
Domestic fuel[3]	1.57	11.55	1.57	11.50	--	.05	.64	5.74
Miscellaneous[3]	1.80	16.94	.64	4.48	1.16	12.46	.32	.62
Not used	.38	13.64	.18	10.24	.20	3.40	.35	4.96
Total	3.75	42.13	2.39	26.22	1.36	15.91	1.31	11.32

[1] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3] Livestock bedding, poultry litter, mulch, small dimension, specialty items, etc.

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Highlights recent Nebraska forest industry trends, production and receipts of saw logs in 1980, and production of other timber products in 1980. Reports on wood and bark residue generated at primary mills and the disposition of this residue.

KEY WORDS: Saw logs, sawmills, fuelwood, posts, mill residue.